

The Invention Claimed Is:

1. A device for receiving and playing back audio/visual (A/V) content from one or more sources of transmitted A/V content comprising:
 - one or more receivers of A/V content each having an A/V input and an A/V signal converter, the A/V inputs selectively receiving transmitted A/V content
 - 5 from the sources, and the A/V signal converters converting the transmitted A/V content into digital A/V signals;
 - a video display circuit coupled to the receivers and having an input, a video output and a video encoding circuitry, the input receiving a video portion of the digital A/V signals from a selected one of the receivers, the video encoding
 - 10 circuitry converting the video portion into a display signal, and the video output emitting the display signal;
 - at least one content capture unit coupled to the receivers and comprising a close caption (CC) data slicer that extracts CC content from the A/V content, a digitized audio capturing unit that extracts audio content from the A/V
 - 15 content, or a video still image capture unit that extracts a still image from the A/V content, the content capture unit receiving at least a portion of the digital A/V signals, capturing part of the digital A/V signals and outputting the captured part of the digital A/V signals; and
 - a captured content storage unit coupled to the content capture unit
 - 20 and comprising memory storage space, the memory storage space receiving and storing the captured part of the digital A/V signals from the content capture unit.
2. A device as defined in claim 1 wherein:
 - the CC data slicer receives a video portion of the digital A/V signals and extracts and captures a CC content part of the video portion;
 - the digitized audio capturing unit receives an audio portion of the
 - 5 digital A/V signals and captures a part of the audio portion; and
 - the video still image capture unit receives the video portion of the digital A/V signals and captures a video still image part of the video portion.

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3. A device as defined in claim 2 wherein:
the receivers scan through a plurality of selected sources of A/V content and send at least a portion of the digital A/V signals corresponding to each selected source to the content capture unit to capture part of the digital A/V signals
5 for each selected source.
4. A device as defined in claim 3 further comprising:
a search engine that receives and searches through the captured part of the digital A/V signals for each selected source to locate a match with user search criteria.
5. A device as defined in claim 4 wherein the user search criteria comprises textual criteria related to the CC content captured by the CC data slicer, audio criteria related to the part of the audio portion captured by the digitized audio capturing unit, video criteria related to the video still image captured by the video
5 still image capture unit, or a combination thereof.
6. A device as defined in claim 5 wherein a match in the audio criteria indicates a change in the A/V content of the selected source in which the match occurred.
7. A device as defined in claim 4 further comprising response instructions to be followed upon the location of a match.
8. An A/V device as defined in claim 7 wherein the response instructions comprise:
instructions to provide a visible alert signal;
instructions to provide an audible alert signal;
5 instructions to begin displaying, through the video display circuit, the A/V content from the selected channel in which the match was located;
instructions to display the CC content part from the selected channel in which the match was located;
instructions to capture a video still image by the video still
10 image capture unit from the video portion of the digital A/V signal of the selected channel in which the match was located;

instructions to record the A/V content of the selected channel
in which the match was located;

- 15 instructions to record the CC content part of the selected
channel in which the match was located; or
a combination thereof.

9. A device as defined in claim 3 wherein:
the captured part of the digital A/V signals for each selected source
comprises CC content; and

the CC content of each selected channel is displayed for viewing.

10. A device as defined in claim 1 wherein the sources of transmitted A/V
content comprise a DVD source, a broadcast programming source, a web
programming site, or a combination thereof.

11. A device as defined in claim 10 wherein the receivers further
comprise a DVD receiver for receiving DVD content from the DVD source, a TV
tuner for receiving broadcast programming from the broadcast programming
source, a web browser for receiving web programming from the web programming
5 site, or a combination thereof.

12. A device as defined in claim 11 wherein the A/V signal converters
further comprise a DVD decoder within the DVD receiver, a video analog-to-digital
converter (ADC), an audio ADC connected to the TV tuner, a web browser program
within the web browser, or a combination thereof.

13. A device as defined in claim 1 wherein the video display circuit further
comprises:

a second video output connection;
a PAL/NTSC video encoder connected to at least one of the channel
5 receivers and to the video output connection first aforesaid; and
a progressive monitor video encoding circuitry connected to the
channel receivers and to the second video output connection.

14. A device as defined in claim 13 wherein the progressive monitor video
encoding circuitry further comprises:

- a de-interlacing unit connected to the channel receivers;
a video scaler connected to the de-interlacing unit; and
5 a video digital-to-analog converter (DAC) connected to the video
scaler and to the second video output connection.
15. A method for processing A/V content in an A/V device comprising the
steps of:
providing an A/V channel;
receiving an A/V signal from the A/V channel;
5 capturing a portion of the A/V signal, wherein the portion of the A/V
signal comprises a CC portion, an audio portion, a video still image, or a
combination thereof; and
storing the captured portion of the A/V signal.
16. A method as defined in claim 15 further comprising the step of:
scanning through a plurality of A/V channels;
receiving the A/V signal from each of the A/V channels;
capturing the portion of the A/V signal from each of the A/V channels;
5 and
storing the captured portion of the A/V signal from each of the A/V
channels.
17. A method as defined in claim 16 further comprising the step of:
searching through the captured portion of the A/V signals from each
of the A/V channels to locate a match with user search criteria.
18. A method as defined in claim 17 wherein:
the user search criteria comprises textual criteria related to the CC
portion of the A/V signal, audio criteria related to the audio portion of the A/V
signal, video criteria related to the video still image of the A/V signal, or a
5 combination thereof.
19. A method as defined in claim 18 wherein:
the video criteria comprises a match within a predetermined tolerance
between the video still image and a predetermined image.

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20. A method as defined in claim 18 further comprising the step of:
indicating a change in the A/V content of a selected A/V channel upon
a match in the audio criteria for the selected A/V channel.
 21. A method as defined in claim 18 further comprising the step of:
capturing and indexing the CC portion of the A/V signal according to
save criteria, wherein the save criteria comprises frequency of save of the CC
portion, frequency of search match, storing a predetermined number of minutes of
5 CC content before and/or after the match location, time-based order of matched
textual criteria, or a combination thereof.
 22. A method as defined in claim 17 further comprising the step of:
responding according to response instructions upon the location of a
match in a selected A/V channel.
 23. A method as defined in claim 22 wherein:
the responding step comprises the further steps of:
 - providing a visible alert signal;
 - providing an audible alert signal;
 - 5 displaying, according to an A/V display format, the A/V content
from the selected A/V channel in which the match was located;
 - displaying, according to a CC display format, text of the CC
portion of the A/V signal from the selected A/V channel in which the match was located;
 - 10 capturing the video still image of the A/V signal from the
selected A/V channel in which the match was located;
 - recording the A/V content of the selected A/V channel in which
the match was located;
 - recording the text of the CC portion of the A/V signal of the
selected A/V channel in which the match was located; or
 - 15 a combination thereof.
 24. A method as defined in claim 23 further comprising the step of:
setting one or more priorities for the response instructions, the search

criteria, the A/V and/or CC display format, the A/V and/or CC recording, the text of the CC portion, or a combination thereof.

25. A method as defined in claim 24 further comprising the step of:
forming the A/V and/or CC display format based on the CC content
and the search match, the display format including options to display per selected
A/V channel, to display per predetermined format on selected A/V channel, to
queue the priorities, or to display the captured video still image.
26. A method as defined in claim 16, wherein the captured portion of the
A/V signal for each A/V channel comprises CC content, further comprising the step
of:
displaying the CC content of at least one A/V channel for viewing.
27. A method as defined in claim 26 further comprising the step of:
displaying the CC content of more than one A/V channel for
simultaneous viewing:
28. A method as defined in claim 26 further comprising the steps of:
receiving the CC content at a first rate; and
displaying the CC content at a second rate different from the first rate.
29. A method as defined in claim 15 further comprising the step of:
providing one or more A/V channels comprising a DVD source, a
broadcast programming source, and a web programming site.
30. A method as defined in claim 29 further comprising the steps of:
receiving DVD content from the DVD source;
receiving broadcast programming from the broadcast programming
source;
31. A method as defined in claim 30, wherein the DVD content includes
subtitle content which is played back at a first rate simultaneously with playback of
the A/V content, further comprising the steps of:
capturing the subtitle content at a second rate that is faster than the

- 5 first rate;
- indexing the captured subtitle content; and
searching for matches within the indexed subtitle content.
32. A method as defined in claim 30 further comprising the step of:
searching the captured portion of the A/V signal of at least one broadcast programming source and at least one DVD source simultaneously.
33. A method as defined in claim 30 wherein the web programming includes a live A/V broadcast with CC content.
34. A method as defined in claim 30, wherein the broadcast programming includes the CC portion, further comprising the step of:
enabling karaoke features for the CC portion of the broadcast programming.
35. A method as defined in claim 15 further comprising the steps of:
selecting video encoding circuitry from between a PAL/NTSC video encoder and a progressive monitor video encoding circuitry; and
displaying the A/V signal through the selected video encoding circuitry.
- 5 36. A method as defined in claim 35 wherein:
upon selection of the progressive monitor video encoding circuitry, the displaying step further comprises the steps of:
de-interlacing the A/V signal;
5 scaling the de-interlaced A/V signal; and
converting the de-interlaced A/V signal from a digital signal to an analog signal.
37. A digital versatile disk (DVD) player for playing back DVD content on a display comprising:
a video encoding circuit comprising a digital video input, a video signal converter and a display signal output, the digital video input receiving a 5 digital video signal, the video signal converter converting the digital video signal into a display signal, and the display signal output providing the display signal to

the display;

- a source of compressed DVD content;
- a DVD decoder comprising a DVD input connected to the DVD content source and a DVD output connected to the digital video input of the video encoding circuit, the DVD input receiving the compressed DVD content, and the DVD output providing decoded DVD content decoded from the compressed DVD content; and
 - a broadcast television (TV) tuner comprising a broadcast input and a program output, the broadcast input receiving multiple broadcast TV programs, and the program output connected to the digital video input of the video encoding circuit and providing a selected one of the multiple broadcast TV programs to the video encoding circuit;
 - and wherein the video encoding circuit converts either the selected TV program or the decoded DVD content into the display signal.
- 38. A DVD player as defined in claim 37 further comprising:
 - a second broadcast TV tuner comprising a broadcast input and a program output, the broadcast input receiving the multiple broadcast TV programs, and the program output connected to the digital video input of the video encoding circuit and providing a second selected one of the multiple broadcast TV programs to the video encoding circuit;
 - and wherein the video encoding circuit converts the selected TV program first aforesaid, the second selected TV program or the decoded DVD content into the display signal.
- 39. A digital versatile disk (DVD) player for playing back a digital video signal on a conventional television or progressive monitor comprising:
 - a source of the digital video signal, the digital video signal being interlaced and having a source resolution; and
 - 5 a video encoding circuit comprising a digital video input, a video encoder, a de-interlacing unit, a video scaler, a video digital-to-analog converter (DAC) and a display signal output, the digital video input connected to the video

encoder and the de-interlacing unit, the de-interlacing unit connected to the video scaler, the video scaler connected to the video DAC, and the video DAC connected
10 to the display signal output;

and wherein:

the digital video input receives the digital video signal and provides the digital video signal to a selected one of either the video encoder or the de-interlacing unit;

15 the video encoder encodes the digital video signal into a conventional television signal having a first display resolution and provides the conventional television signal to the conventional television; and

the de-interlacing unit de-interlaces the digital video signal into a progressive video signal, the video scaler scales the progressive video signal
20 into a scaled video signal having a second display resolution, the video DAC converts the scaled video signal into a display signal, and the display signal output provides the display signal to the progressive monitor.

40. A DVD player as defined in claim 39 wherein:

the first display resolution is equal to or less than the source resolution; and

the second display resolution is equal to or greater than the source
5 resolution.

41. A DVD player as defined in claim 39 wherein the source of the digital video signal comprises a DVD source and a conventional broadcast television source.

42. A digital versatile disk (DVD) player for playing back an audio/visual (A/V) signal comprising:

a source of the A/V signal, the A/V signal comprising close caption (CC) content, audio content and video content;

5 at least one content capture unit coupled to the source of the A/V signal, the content capture unit receiving at least a portion of the A/V signal and capturing part of the A/V signal, and each content capture unit comprising:

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- 10 a CC data slicer;
 an audio capture unit;
 a video still image capture unit; or
 a combination thereof; and
 a captured content storage unit coupled to the content capture unit
and comprising memory storage space, the memory storage space receiving the
captured part of the A/V signal from the content capture unit and storing the
15 captured part of the A/V signal.
43. A DVD player as defined in claim 42 wherein the source of the A/V
signal comprises a DVD source and a conventional broadcast television source.
44. A DVD player as defined in claim 43 wherein the source of the A/V
signal further comprises a World Wide Web A/V source.
45. A programmable storage device readable by a machine tangibly
embodying a program of instructions executable by the machine to perform method
steps for processing A/V content in an A/V device, the method steps comprising:
 providing an A/V channel;
5 receiving an A/V signal from the A/V channel;
 capturing a portion of the A/V signal, wherein the portion of the A/V
signal comprises a CC portion, an audio portion, a video still image, or a
combination thereof; and
 storing the captured portion of the A/V signal.
46. A programmable storage device as defined in claim 45, wherein the
method steps further comprise:
 scanning through a plurality of A/V channels;
 receiving the A/V signal from each of the A/V channels;
5 capturing the portion of the A/V signal from each of the A/V channels; and
 storing the captured portion of the A/V signal from each of the A/V
channels.
47. A programmable storage device as defined in claim 46, wherein the
method steps further comprise:

searching through the captured portion of the A/V signals from each of the A/V channels to locate a match with user search criteria.

48. A programmable storage device as defined in claim 47, wherein the method steps further comprise:

the user search criteria comprises textual criteria related to the CC portion of the A/V signal, audio criteria related to the audio portion of the A/V

5 signal, video criteria related to the video still image of the A/V signal, or a combination thereof.

49. A programmable storage device as defined in claim 46, wherein the captured portion of the A/V signal for each A/V channel comprises CC content and the method steps further comprise:

displaying the CC content of each A/V channel for viewing.

50. A programmable storage device as defined in claim 45, wherein the method steps further comprise:

providing one or more A/V channels comprising a DVD source, a broadcast programming source, and a web programming site.